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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,360	02/13/2006	Marinus Gerardus Johannus Van Beuningen	6595954	1051
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NEW YORK, NY 10016				
EXAMINER				
YU, MELANIE J				
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1641				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/568,360

Applicant(s)

VAN BEUNINGEN ET AL.

Examiner

MELANIE YU

Art Unit

1641

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 3, 6 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7-22, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's elections without traverse of group I, claims 1, 2, 4 5, 7-22, 24 and 25 in the reply filed on 15 September 2008 and of a monomer from species group A and an inorganic material from species group B, in the reply filed on 21 January 2009 are acknowledged.

Specification

2. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Appropriate correction is required

35 USC § 112, sixth paragraph

2. The means plus function language in claims 15 and 16 falls within and invokes 35 USC 112, sixth paragraph.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4, 5, 7-22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hess et al. (US 2002/0094533).

Hess et al. teach:

a system comprising a reaction substrate with a multiplicity of reactor zones (plurality of through holes having immobilized probes, par. 15), the reaction substrate having a substantially flat top surface and a substantially flat bottom surface (top and bottom are flat, Fig. 1), the reaction substrate being porous with a multiplicity of essentially parallel pores enabling the liquid flow through (high density of holes, par. 10; holes are parallel, par. 224), the pores having a diameter of less than 1 μm or less than 100 nm (par. 96), which is encompassed by the range of about 10 μm to 10 nm;

the flat top surface bonded to the bottom of a first rigid support (three platens are stacked, center platen is the reaction substrate and the top platen is the rigid support, par. 99; the top platen is made from a rigid material, par. 95; upper surface of bottom platen, reaction substrate, is bonded to the top surface of the upper platen, rigid support, par. 11) the rigid support comprising a multiplicity of through going holes extending from the top of the rigid support to the bottom of the rigid support (top platen is rigid support and has through holes, platens are stacked and can have the same arrangement of through holes, par. 98-99), wherein the through going holes define reactor zones (plurality of through holes have immobilized probes, par. 15).

With respect to claim 2, Hess et al. teach a subset of the holes being reversibly masked (mask is reusable and therefore can be removed thus providing a reversible masking, par. 21).

Regarding claim 4, Hess et al. teach part of the pores being masked by filling the pores with a masking polymer, wherein the masked pores define the outer borders of the reactor zones (par. 130).

With respect to claims 5 and 14, Hess et al. teach monomers anchored to the walls of the pores (reagents may be attached to walls of through-holes, par. 11; reagents may be monomers, par. 24).

Regarding claim 7, Hess et al. teach chemical reagents monitored optically (par. 31, 35 and 64).

With respect to claims 8, 20 and 21, Hess et al. teach the reactions being nucleotide synthesis reactions and forming oligonucleotides (par. 208-210).

Regarding claims 9, 10 and 12, Hess et al. teach the reaction substrate made of an inorganic material that is temperature resistant and optically transparent (plates made from glass, par. 13).

With respect to claim 11, Hess et al. teach a thermal bonding between the rigid support and the reaction substrate (par. 112).

With respect to claim 13, Hess et al. teach the holes of the rigid support reversibly containing reaction components (par. 210). Although Hess et al. do not specifically teach the reaction components being reversible, such a limitation is drawn to intended use and does not provide any structural limitations to the device. The prior art must only be capable of performing the recited intended use. Since the reaction components described in par. 210 are capable of being removed from the through holes and are therefore the holes reversibly contain the reaction reagents.

Regarding claims 15 and 16, Hess et al. teach a means for applying pressure and a means for inducing a reversible flow through the reaction substrate (par. 64).

With respect to claim 17, Hess et al. teach a reaction manifold for selectively delivering particular reagents to the reaction zones (par. 133).

Regarding claim 18, Hess et al. teach the rigid support having 10,000 through holes (par. 314), which is encompassed by the recited ranges of at least 96, 384 or 1536 holes.

With respect to claim 19, Hess et al. teach the bottom surface of the reaction substrate bonded to the top of a second rigid support (three platens are stacked, center platen is the reaction substrate and the top platen is the rigid support, par. 99; the bottom platen is made from a rigid material, par. 95; upper surface of bottom platen is bonded to the top surface of the reaction substrate, par. 11), the second rigid support having through going holes extending from the top of the second rigid support to the bottom of the second rigid support, and the holes of the second rigid support aligned with the holes of the first rigid support (par. 98 and 99).

Regarding claim 22, although Hess et al. do not specifically teach the system used for synthesizing different polymers in parallel, such a limitation is drawn to the intended use of the system and does not provide any further product limitations to the structure of the system. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. Since the system of Hess et al. teach the limitations required by claim 1, the system taught by Hess et al. is capable of performing the recited intended use.

With respect to claim 24, Hess et al. teach an apparatus comprising: a system according to claim 1 (see claim 1 above), an incubation device for holding the system (par. 188), a loading station (par. 203), a dispensing and aspiration station (par. 25 and par. 260), a pressure application station (par. 154) and a reading station (par. 302).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hess et al. (US 2002/0094533) in view of Liddiard (US 4,574,263).

Hess et al. teach a reaction substrate made of metals, glass or plastic (par. 95), but fail to teach the reaction substrate made of aluminum oxide.

Liddiard teach a glass or aluminum oxide substrate having through holes (col. 2, lines 42-56), in order to provide a substrate for a high performance detector.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use as the substrate in the device of Hess et al., Liddiard as taught by Liddiard. One having ordinary skill in the art would have been motivated to make such a change as a mere alternative and functionally equivalent substrate material the same expected substrate effect would have been obtained. The use of alternative and functionally equivalent techniques would have been desirable to those of ordinary skill in the art based on the economics and availability of components.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELANIE YU whose telephone number is (571)272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571) 272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Melanie Yu/
Patent Examiner, Art Unit 1641